CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER NO. 98-707

FOR
COUNTY OF KERN
KERN COUNTY WASTE MANAGEMENT DEPARTMENT
LEBEC SANITARY LANDFILL
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The County of Kern, Kern County Waste Management Department, (hereafter Discharger) owns and operates a municipal solid waste landfill approximately one mile southwest of Lebec, in Sections 33 and 34, T9N, R19W, S.B.B.&M, as shown in Attachment A, which is incorporated herein and made part of this Order.

2. On 17 April 1998, the Board adopted Order No. 98-078, which prescribes waste discharge requirements for this facility, which is classified as a Class III landfill that accepted municipal solid waste in accordance with Title 27, California Code of Regulations, §20005 et seq. (Title 27).

3. The landfill consists of one unlined waste management unit covering 13.5 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Numbers (APN) 255-190-23, and 255-540-13.

4. This Order requires the Discharger to implement an adequate detection monitoring program, implement and complete an evaluation monitoring program, and implement a corrective action program that complies with the provisions of Subchapter 3 of Chapter 3 of Title 27 in accordance with a time schedule incorporated in this Order.

SITE DESCRIPTION

5. The facility lies in a canyon in the San Emigdio Mountains, at the southern end of the Tulare Lake Hydrologic Basin of the San Joaquin Valley. The elevation of the native ground surface at the facility ranges from between approximately 3,890 feet above mean sea level at the eastern boundary to 4,160 feet above mean sea level at the northern facility boundary. The ground surface slopes toward the east.

6. The waste management facility is on bedrock and alluvial deposits. The soils underlying the facility consist of interbedded silts, sands, and gravels.
7. The measured hydraulic conductivity of the native soils underlying the waste management unit range between 1.4×10^{-4} and 7.5×10^{-5} cm/sec.

8. There are six municipal, domestic, industrial, or agricultural supply wells within a 1-mile radius of the site. No surface springs or other sources of groundwater supply have been observed.

9. The Board adopted the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan) which designates beneficial uses and contains water quality objectives for all waters of the Basin. This Order implements the Basin Plan.

10. The first encountered groundwater is approximately 43 to 73 feet below the native ground surface. Groundwater elevations range from 3,818 feet M.S.L. to 3,978 feet M.S.L.

11. Monitoring data indicates that the groundwater is unconfined. The depth to groundwater fluctuates seasonally as much as 14 feet.

12. The direction of groundwater flow is toward the southeast. The average groundwater gradient is approximately 0.140 feet per foot. The average groundwater velocity has not been determined.

13. Monitoring data indicates that groundwater quality is generally good, with a specific electrical conductivity range from 291 to 850 micromhos/cm, with Total Dissolved Solids ranging from 215 to 760 mg/l.

14. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

15. The Discharger's detection monitoring program for groundwater for this Waste Management Unit does not satisfy the requirements contained in Title 27.

GROUNDWATER DEGRADATION

16. "Pollution" means an alteration of the quality of the waters of the State by waste to a degree which unreasonably affects: (1) such waters for beneficial uses, or (2) facilities which serve such beneficial uses [California Water Code, §13050 (1)]. Water quality objectives are levels of constituents that are established for the reasonable protection of beneficial uses of waters. Exceedence of water quality objectives, including Maximum Contaminant Levels, constitutes pollution.

17. Section 13304 (a) of the California Water Code states:

> "Any person...who has caused or permitted...any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the

> regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action..."

18. Section 13267 (b) (1) of the California Water Code states:

> "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste within its region...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires..."

19. Downgradient monitoring wells installed for the Solid Waste Water Quality Assessment Test (SWAT) investigation, conducted in November 1989, found that the following waste constituents have degraded the groundwater: dichlorodifluoromethane (Freon 12), 1,1,1-trichloroethane (1,1,1-TCA), trichlorofluoromethane (Freon 11), tetrachloroethene (PCE), acetone, chloromethane, naphthalene, bromomethane and dinoseb at concentrations below any primary maximum contaminant level (MCL) for drinking water as established by the Department of Health Services. Methylene chloride has been detected at a concentration exceeding the primary MCL for drinking water.

20. Analyses of groundwater samples collected from on-site monitoring wells indicate that waste constituents from the landfill have degraded the groundwater. Volatile organic compounds (VOCs) were first detected in November 1989. Groundwater analyses from monitoring wells from November 1989 to the present have repeatedly detected the following waste constituents: dichlorodifluoromethane (Freon 12), 1,1,1-trichloroethane (1,1,1-TCA), trichlorofluoromethane (Freon 11), and tetrachloroethene (PCE).

    These confirmed waste constituents have been detected in groundwater at the following maximum concentrations: dichlorodifluoromethane (Freon 12) - 24 µg/l , 1,1,1-trichloroethane (1,1,1-TCA) - 5.5 µg/l, trichlorofluoromethane (Freon 11) - 43 µg/l, and tetrachloroethene (PCE) - 1 µg/l. The concentrations of these constituents do not exceed the respective primary MCLs.

    Volatile organic compounds detected in groundwater in the two downgradient monitoring wells, have been detected at concentrations below their respective MCLs except methylene chloride. Methylene chloride has been detected at a maximum concentration of 6 µg/l. The primary MCL for methylene chloride is 5 µg/l.

    Because there is no background groundwater monitoring well, it cannot be determined whether general minerals leached from the wastes have impacted groundwater.

21. The groundwater degradation was caused by a release (discharge of waste) from the waste management unit.

22. The current plume of degraded groundwater creates or threatens to create a condition of pollution or nuisance.

23. California Water Code §13304 requires dischargers to cleanup waste and abate the effects of waste. Cleanup and abatement measures include corrective action measures as required under Title 27.

24. The Discharger has not implemented an evaluation monitoring program.

25. The full lateral and vertical extent of groundwater degradation has not been determined. Additional groundwater sampling locations are needed to delineate the nature and extent of waste constituents in groundwater.

COMPLIANCE CONSIDERATIONS

26. The discharge of waste constituents that has caused a degradation of groundwater is a violation of Waste Discharge Requirements Order No. 98-078, Prohibitions A.2, A.3, and A.4.; Discharge Specification B.5; and General Provisions 1, 3, and 4 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Discharges Regulated by Title 27 and/or Part 258, August 1997* (hereafter Standard Provisions and Reporting Requirements), which requires that the discharge shall not create a condition of degradation or pollution.

27. The Discharger is in violation of Order No. 98-078, Detection Monitoring Specification E.4, which requires the Discharger not to exceed the water quality protection standard established pursuant to Monitoring and Reporting Program No. 98-078. Evidence of exceedence of the standard for volatile organics occurs when the constituent is detected by the appropriate method. Volatile organic compounds exceeding the water quality protection standard have been repeatedly detected in the monitoring wells (see Finding Nos. 19 and 20).

28. Subsections 20385 (a) (2) and (4) of Title 27 requires the Discharger to initiate an evaluation monitoring program whenever there is significant evidence of a release from the waste management unit during a detection monitoring program, and to institute a corrective action program when the Board determines that the assessment of the nature and extent of the release and the design of a corrective action program have been satisfactorily completed. These programs must be applied to all water bearing zones affected by the release, including perched water zones.

29. An evaluation monitoring program is used to assess the nature and extent of a release from a waste management unit and to design a corrective action program in accordance with §20430 of Title 27 [Title 27, §20425 (a)]. In assessing the nature and extent of a release

from a waste management unit, the Discharger is obligated to include a determination of the spacial distribution and concentration of each constituent of concern throughout the zone affected by the release [Title 27, §20425 (b)].

30. Evaluation monitoring is required to be implemented when the detection monitoring program determines that waste constituents have leaked from the waste management unit (see Finding Nos. 19 and 20). In the case of organic compounds which are not naturally occurring, their presence in samples from detection monitoring wells is evidence of a release from the waste management unit. For naturally occurring compounds and constituents, evidence of a release is based on a measurably significant increase in their concentration(s) above the water quality protection standard.

31. Non-naturally occurring organic compounds have been continuously detected in samples from the detection monitoring wells (see Finding Nos. 19, and 20). This detection of waste constituents constitutes evidence of a release from the waste management unit. The Discharger is therefore obligated to initiate an evaluation monitoring program in accordance with §20425 of Title 27 in order to determine the extent of migration of the waste constituents, to assess their potential threat to the beneficial uses of the areal groundwater, and to prepare a corrective action program in accordance with §20430 of Title 27.

32. The landfill does not have an adequate background well. As such, it is unknown if inorganic waste constituents have degraded groundwater.

33. Section 20420 (k) (5) of Title 27 requires that within 90 days of determining a measurably significant evidence of a release, a discharger shall submit to the Board an amended report of waste discharge to establish an evaluation monitoring program meeting the provisions of §20425 of Title 27.

34. Section 20420 (k) (6) of Title 27 requires that within 180 days of determining a measurably significant evidence of a release, a discharger shall submit an engineering feasibility study for a corrective action program necessary to meet the requirements of §20430 of Title 27. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

35. Section 20425 (b) of Title 27 requires a discharger to complete an evaluation of the nature and extent of a release from the waste management unit and to submit the assessment to the Board within 90 days of establishing an evaluation monitoring program.

36. Section 20425.9 (c) of Title 27 requires a discharger to submit an updated engineering feasibility study for corrective action based on the results of the evaluation monitoring program and an amended report of waste discharge to establish a corrective action program

meeting the requirements of §20430 of Title 27 to the Board within 90 days of establishing an evaluation monitoring program.

37. An evaluation monitoring program was required to have been conducted within the regulatory time frame following the effective date of the Article 5 revisions to Title 23, California Code of Regulations, Section 2510 et seq. (Chapter 15, effective 1 July 1991) because of the repeated detection of VOCs in groundwater since November 1989 (see Finding Nos. 19 and 20).

38. The Discharger has not complied with the time frames contained in former Chapter 15 or Title 27 for the completion of an evaluation monitoring program and the submission of a proposed corrective action program (see Finding Nos. 35 and 36), and is therefore in non-compliance with the applicable provisions of Title 27.

44. Pursuant to §13308 of the California Water Code, if the Regional Board determines there is a threatened or continuing violation of any cleanup and abatement order issued under §13304 of the California Water Code, the Board may issue an order establishing a time schedule and prescribing a civil penalty which shall become due if compliance is not achieved in accordance with that time schedule. The amount of the civil penalty shall be based upon the amount reasonably necessary to achieve compliance. The amount of the penalty may not exceed ten thousand dollars ($10,000) for each day in which the violation occurs.

45. Any person who fails to achieve compliance in accordance with the schedule established in an order issued pursuant to §13304 of the California Water Code shall be liable civilly in an amount not to exceed the amount prescribed by statute.

IT IS HEREBY ORDERED that, pursuant to §13267(b) and §13304(a) of the California Water Code, the County of Kern, Kern County Waste Management Department, its agents, successors, and assigns, shall comply with the following tasks and time schedules. All work outlined below shall be performed under the direction of a California registered civil engineer or California registered geologist, as appropriate. Supporting data and rationale shall be submitted for each proposed plan. All plans and time schedules are subject to the review and approval by the Executive Officer. Submitted time schedules become part of this Order once approved or revised by the Executive Officer.

All monitoring wells and all other borings drilled to satisfy the requirements of Title 27 shall be logged during drilling under the direct supervision of a California registered geologist. Copies of all well logs shall be submitted to Board staff upon completion of drilling.

DETECTION MONITORING PROGRAM

1. By **1 September 1998**, the Discharger shall submit for Executive Officer approval or modification, a work plan and time schedule for completing a detection monitoring program for the waste management unit. The detection monitoring program shall include a sufficient number of Background Monitoring Points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer(s) that represent the quality of groundwater that has not been affected by a release from the unit.
2. By **1 September 1998**, the Discharger shall submit for Executive Officer approval or modification, a work plan and time schedule for submitting a Water Quality Protection Standard pursuant to §20390 of Title 27. The Water Quality Protection Standard shall include concentration limits for each constituent of concern established in accordance with a data analysis method that meets the applicable criteria of §20415(e) of Title 27.

3. The Discharger shall establish the Point of Compliance as the eastern and southern edges of the waste management unit.

4. The Discharger shall establish a groundwater monitoring well system for the waste management unit that includes a sufficient number of Monitoring Points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer(s) that represent the quality of groundwater passing the Point of Compliance and to allow for the detection of a release from the unit.

5. The Discharger shall determine whether there is measurably significant evidence of a release for all inorganic constituents of concern and monitoring parameters.

EVALUATION MONITORING PROGRAM

6. **By 31 December 1998,** the Discharger shall submit for Executive Officer review and approval, a work plan and time schedule for completing an evaluation monitoring program that meets the provisions of §20425 (b) of Title 27.

7. Within **180 days** of Executive Officer approval of the submitted work plan and time schedule pursuant to Order No. 6 above, the Discharger shall initiate the evaluation monitoring program in accordance with the approved work plan and time schedule.

8. The Discharger shall submit a completed evaluation monitoring report in accordance with the time schedule approved pursuant to Order No. 6 above. The report, completed pursuant to §20425(b) of Title 27, shall include, but not be limited to, the following information:

   a. An analysis of all the information gathered to assess the nature and extent (lateral and vertical) of the release from the waste management unit, including how a determination of the spacial distribution and concentration of each constituent of concern throughout the zone(s) affected by the release was accomplished.

   b. A table listing the constituents of concern that includes the proposed concentration limit for metals and general water quality parameters based on a statistical evaluation of background concentrations of these parameters.

   c. The water quality protection standard for evaluation monitoring based on a sufficient number of background monitoring points that represent the quality of groundwater (organic and inorganic compounds) in the uppermost aquifer(s) that has not been affected by a release from the waste management unit in accordance with §20415 (b) (1) (A) and §20415 (b) (2) of Title 27.

   d. Any proposed changes to the water quality monitoring systems at the facility necessary to meet the provisions of §20425 of Title 27.

e. Any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods, or statistical methods used at the facility necessary to meet the provisions of §20425 of Title 27.

9. Within **90 days** of the Executive Officer's concurrence that the nature and extent (lateral and vertical) of the release from the waste management unit has been determined, the Discharger shall submit, pursuant to §20425 (c) of Title 27 an updated engineering feasibility study for corrective action necessary to meet the requirements of §20430 of Title 27. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

10. The discharger shall report to Board staff in writing, the status of progress of the evaluation monitoring program. The Discharger shall submit these reports quarterly. More frequent reporting may be required as necessary to ensure the protection of human health or the environment.

CORRECTIVE ACTION PROGRAM

11. Within **120 days of Executive Officer approval** of the engineering feasibility study, the Discharger shall submit, for Executive Officer review and approval, a plan and proposed time schedule to cleanup and abate the effects of all contaminants discharged to soil and groundwater at the site. The Discharger shall establish a corrective action program pursuant to §20425 (d) of Title 27 that meets the requirements of §20430 of Title 27. The report shall include, but not be limited to, the following:

    a. A detailed assessment of the nature and extent of the release from the waste management unit;

    b. A proposed water quality protection standard in accordance with §20400 of Title 27, and all data necessary to justify each such limit;

    c. A detailed description of proposed corrective action measures that will be taken to achieve compliance with the water quality protection standard proposed for the corrective action program; and

    d. A plan for a water quality monitoring network that will demonstrate the effectiveness of the proposed corrective action.

12. The Discharger shall take corrective action in accordance with the approved time schedule to remediate releases from the waste management unit and to ensure that the waste management unit achieves compliance with the water quality protection standard pursuant to §20390 of Title 27.

13. The Discharger shall implement corrective action measures, meeting the requirements of §20430 of Title 27 and approved by the Executive Officer, that ensure that constituents of concern achieve their respective concentration limits at all monitoring points and throughout the zone(s) affected by the release, including any portions thereof that extend beyond the facility boundary, by removing the waste constituents or treating them in place. The Discharger shall take other action approved by the Executive Officer to prevent noncompliance with those limits due to a continued or subsequent release from the waste management unit, including but not limited to, source control.

14. If waste constituents present in surface water or groundwater are determined to be the result of landfill gas migration, then landfill gas from the waste management unit shall be adequately vented, removed, or otherwise controlled to prevent the impairment of the beneficial uses of surface water or groundwater due to migration through the vadose (unsaturated) zone.

15. The Discharger shall establish and implement a water quality monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program shall be based on the requirements for an evaluation monitoring program under §20425 of Title 27, and shall be effective in determining compliance with the water quality protection standard under §20390 of Title 27, and in determining the success of the corrective action measures pursuant to §20430 (c) of Title 27.

16. Cleanup and abatement measures taken without specific dates specified in this Order shall be initiated and completed by the Discharger within a period of time specified by the Executive Officer.

17. The Discharger shall report on the effectiveness of the corrective action program. The Discharger shall submit these reports **quarterly**. More frequent reporting may be required as necessary to ensure the protection of human health or the environment.

18. If the Discharger determines that the corrective action program does not satisfy the provisions of this Order, the Discharger shall, within **90 days** of making the determination, make appropriate changes to the program.

19. Any time the Executive Officer determines that the corrective action program does not satisfy the requirements of this Order, the Discharger shall, within **90 days** of receiving written notification of such determination by the Executive Officer, make appropriate changes to the program.

20. Corrective action measures taken pursuant to §20430 (c) of Title 27 may be terminated when the Discharger demonstrates to the satisfaction of the Executive Officer that the concentrations of all constituents of concern are reduced to levels at or below their

respective concentration limits established with the water quality protection standard under §20390 or §20400 (c) of Title 27.

21. The facility shall remain in the corrective action program until an approved detection monitoring program that meets the requirements of §20420 of Title 27 has been incorporated into waste discharge requirements and until the Discharger demonstrates to the satisfaction of the Board that the landfill is in compliance with the water quality protection standard. The demonstration shall be based on the criteria contained in §20430 (g) (1) and (2) of Title 27.

TASK LIST

22. The Discharger shall complete the tasks outlined in this Cleanup and Abatement Order in accordance with the following time schedule:

Task	Compliance Date
a. Submit for Executive Officer approval or modification, a work plan and time schedule for completing a detection monitoring program. (Order Nos. 1, 3, 4, and 5 above)	**1 September 1998**

Task	Compliance Date
b. Submit for Executive Officer approval or modification, a work plan and time schedule for submitting a Water Quality Protection Standard. (Order No. 2, above)	**1 September 1998**
c. Submit a work plan and time schedule for completing an evaluation monitoring program for Executive Officer review and approval. (Order No. 6, above)	**31 December 1998**
d. Initiate the evaluation monitoring program in accordance with the approved work plan and time schedule (Order No. 7, above)	**Within 180 days of submission of the work plan and time schedule.**

e.	Submit a completed evaluation monitoring program. (Order No. 8, above)	**In accordance with the approved time schedule for completion of the evaluation monitoring program.**
f.	Submit an engineering feasibility study for a corrective action program. (Order No. 9, above)	**Within 90 days of Executive Officer concurrence that the nature and extent of the release has been determined.**
g.	Submit a plan and time schedule to establish a corrective action program. (Order No. 11, above)	**Within 120 days of Executive Officer approval of the engineering feasibility study.**
h.	Implement a corrective action program. (Order No. 12, above)	**In accordance with the approved time schedule.**
i.	Vent landfill gases from the waste management unit. (Order No. 14 above)	**To be implemented in accordance with the approved corrective action plan.**

If, in the opinion of the Executive Officer, the Discharger violates this Order, the Executive Officer may issue a complaint for Administrative Civil Liability or request the Board to refer the matter to the Attorney General for judicial enforcement.

GARY M. CARLTON, Executive Officer

by: _____
LOREN J. HARLOW, Assistant Executive Officer

DATED: 4/24/98

RCS:rcs/rac